



Environmental Assessment

Gopher Tortoise Habitat Improvement

United States
Department of
Agriculture

Forest
Service

December 2009



Apalachicola National Forest, Florida
Apalachicola and Wakulla Ranger Districts
Franklin, Leon, Liberty, and Wakulla Counties

Deciding Officer:
Marcus A. Beard
District Ranger

For Information Contact:
Susan Fitzgerald
Apalachicola Ranger District
PO Box 579
Bristol, FL 32321
850-643-2282 ex. 1531
sfitzgerald@fs.fed.us

TABLE OF CONTENTS

SUMMARY	i
CHAPTER I. PURPOSE AND NEED	1
A. Proposed Action	1
B. Purpose and Need	2
C. Scope of Environmental Analysis.....	4
D. Decision to Be Made	5
E. Public Involvement	5
F. Relevant Issues	5
G. Other Issues.....	6
CHAPTER II. ALTERNATIVES CONSIDERED	7
A. Introduction.....	7
B. Description of Alternatives.....	7
C. Coordination Measures for Action Alternative	8
D. Monitoring and Evaluation.....	9
E. Alternatives Considered but Eliminated from Detailed Study	10
F. Comparison of Alternatives.....	10
CHAPTER III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.	11
A. Introduction.....	11
B. Biological Environment	11
C. Physical Environment	17
D. Socio Economic Environment	21
1. Effects on Human Health and Safety.....	21
2. Economics.....	22
F. Irreversible and Irretrievable Commitment of Resources.....	23
Federal, State, and Local Agencies	24
Tribes	24
Others	25
 <i>APPENDIX A - Pesticide Emergency Spill Plan.....</i>	 <i>33</i>
<i>APPENDIX B - Biological Evaluation</i>	<i>33</i>
<i>APPENDIX C - Pesticide Use Proposal Form</i>	<i>34</i>
<i>APPENDIX D - Public Involvement and Comments</i>	<i>35</i>

SUMMARY

The Forest Service is proposing to improve gopher tortoise habitat. This proposal would authorize the treatment, with herbicides and hand tools, of hardwood vegetation on existing and potential gopher tortoise habitat. Existing habitat is determined by the presence of gopher tortoise burrows and potential habitat is determined by soil drainage class. Those areas with a drainage class of Excessively Drained, Somewhat Excessively Drained, Well Drained or Moderately Well Drained are all considered to offer habitat but only if the vegetation has a sparse over- and midstory and an abundance and diversity of herbaceous groundcover. There are areas on the Forest with the appropriate soils but the current vegetative condition precludes gopher tortoise use. Hardwood tree and shrub encroachment has resulted in shading and reduction of the herbaceous component. The Forest Service would like to manage these areas to maintain, increase, and/or repatriate tortoises on them. In order to do this the present unnatural density of hardwoods and shrubs must be reduced. Two Alternatives are considered the No Action and the Proposed Action. A mechanical alternative was discussed but not in detail because it would not meet the purpose and need of rapidly improving habitat without ground disturbance.

Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into five chapters:

Chapter I. Purpose and Need for Action: The chapter includes information the purpose of and need for the project, as well as the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.

Chapter II. Alternatives, including the Proposed Action: This chapter provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes mitigation measures.

Chapter III. Affected Environment and Environmental Consequences: This chapter describes the environmental effects of implementing the proposed action and other alternatives. This analysis is organized by environmental component.

Chapter IV. Consultation and Coordination: This chapter provides a list of preparers, agencies, tribes, and public consulted during the development of the environmental impact statement.

Chapter V. Appendices: The appendices provide more detailed information to support the analyses presented in the environmental assessment.

Additional documentation may be found in the project planning record located at Apalachicola Ranger District Office in Bristol, FL.

INTRODUCTION

The US Forest Service, Apalachicola National Forest, will receive grant money from the National Fish and Wildlife Foundation to restore and manage gopher tortoise habitat in appropriate areas on the Forest. The grant is part of a large partnership program that includes funding from the Southern Company and Project Orianne. Project Orianne's goal is the rangewide conservation and restoration of gopher tortoises, eastern indigo snakes, and their habitat. The effort includes private, state, federal and non-government organization lands. Project Orianne's program for indigo snake conservation is 4 tiered: 1) Land acquisition, 2) Land restoration and management, 3) Inventory and monitoring, and 4) Captive propagation and repatriation. The Apalachicola National Forest was chosen, among others, to receive funds toward the implementation of this initiative. The Forest is one partner in this rangewide project and with this funding will begin the process of "land restoration and management" on sites suitable for gopher tortoises. This proposal also coincides with guidelines in Florida Fish and Wildlife Commission's Gopher Tortoise Management Plan (2007) pg 33: "Pine and hardwood timber harvest and various forms of mechanical and chemical vegetation control should be considered in order to achieve specific habitat and vegetation objectives or enhance degraded habitat."

This proposal would authorize the treatment of existing and potential gopher tortoise habitat with herbicides and hand tools. Existing and potential habitat is determined by soil drainage class. Those areas with a drainage class of Excessively Drained, Somewhat Excessively Drained, Well Drained or Moderately Well Drained are all considered to offer habitat but only if the existing vegetation has a sparse over- and midstory and an abundance and diversity of herbaceous groundcover. There are many areas on the Forest with the appropriate soils but the existing vegetation precludes gopher tortoise use. Hardwood tree and shrub encroachment has resulted in shading and reduction of the herbaceous component. The Forest Service would like to manage these areas to maintain and/or repatriate tortoises on them. In order to do this the present unnatural density of hardwoods and shrubs must be reduced.

CHAPTER I. PURPOSE AND NEED

A. Proposed Action

The Forest Service proposes to utilize herbicide on under- and midstory hardwoods to begin and continue restoration and habitat improvement for gopher tortoises on priority acres within those areas with suitable soils on the Apalachicola and Wakulla Ranger Districts (Maps 1 and 2, suitable soils). Not all acres with suitable soils would need treatment, most offer appropriate habitat already as a result of effective prescribed burning. Smaller subsets (priority acres/areas) would be identified within the suitable acres for hand tool and herbicide treatment as the project progresses through time. These treatment areas would be separated by time and space.

Once the herbicide has achieved the desired conditions (more than one treatment may be needed), prescribed fire would be used for maintenance and further improvement. The priority acres to be treated would be either existing gopher tortoise habitat that is rapidly

degrading and those acres that have a high potential to become habitat if the hardwoods are reduced and the additional sunlight reaching the ground along with prescribed fire encourages herbaceous groundcover.

Only Forest Service approved herbicides would be used. Labeling instructions and precautions would be followed. The herbicide application would be managed by a Forest Service employee that is a Certified Pesticide Applicator and also certified to oversee contracts. The Forest Service uses mixes and concentrations lower than the maximum allowed. Selective methods that may be employed would include directed foliar spray, stem injection, basal spray, cut-surface treatment, and soil spot treatments. No aerial or aquatic applications would be involved. Herbicides being considered for use include hexazinone, glyphosate, imazapyr, and triclopyr.

As stated above, the proposal is not to treat all suitable acres but as the project goes through time and funding is available subsets of priority acres would be identified and treated. There are three priority areas that we would focus on with the present funding; these areas presently either have gopher tortoises that are rapidly losing habitat or have suitable soils but no gopher tortoises due to hardwood encroachment.

The current priority areas being considered are: the Black Creek Tract and stands to the west up to State Route 375, T2S, R4W, Sec 13, 18 (1000 acres, Map 3), Bradwell Game Farm, T1S, R4W, Sec 19, 20, 30 and T1S, R5W, Sec 24, 25 (300 acres, Map 4) and 2000 acres in the Munson Sandhills, T2S, R1W, Sec 6, 7 and T2S, R2W, Sec 1 (Map 5). All acreages are preliminary estimates.

Before treatment all identified priority acres would be mapped. The kind of herbicide that would be used on those acres would be determined depending on the type and current condition of the vegetation. A pesticide use proposal must be completed for each area. Any circumstances that require special considerations, including but not limited to the proximity of private land, water or wetlands, and threatened or endangered species would be recorded and mitigation implemented. Herbicide would not be applied within 100 feet of private land unless written permission from the land owner is received.

The funding for this project is projected to be available October 1, 2009.

B. Purpose and Need

The proposed project is designed to rapidly restore gopher habitat to suitable conditions by reducing under- and midstory hardwood encroachment and increasing herbaceous groundcover abundance and diversity. Due to the availability of grant funding and the contribution this Forest can make toward increasing gopher tortoise numbers and stability, and possibly keeping it from becoming Federally listed in Florida, hardwood control with herbicides on gopher tortoise suitable soils is being proposed.

The proposed action responds to goals outlined in the Revised Land and Resource Management Plan for the National Forests in Florida, February 1999 pages 2-3 through 2-4 (Forest Plan). These goals guide and help achieve forest management direction and the desired future condition.

- Strengthen partnerships and actively pursue communication, cooperation, and partnerships with other national forests, other agencies, groups, local communities, organizations, and tribal governments to serve the public interest, consistent with the Forest Service Mission.
- Maintain or, where necessary, restore ecosystem composition, structure, and function within the natural range of variability in all ecosystems, with emphasis on longleaf-wiregrass, pine flatwoods, hardwood/cypress, oak hammock ecosystems, and other imperiled specialized communities.
- Conserve and protect important elements of diversity - such as endangered and threatened species habitat, declining natural communities, and uncommon biological, ecological, or geologic sites.
- Manage for habitat conditions to recover and sustain viable populations of all native species, with special emphasis on rare species.

“Gopher tortoises live in well-drained sandy areas with a sparse tree canopy and abundant low growing vegetation. They are commonly found in habitats such as sandhill, pine flatwoods, scrub, scrubby flatwoods, dry prairies, xeric hammock, pine-mixed hardwoods, and coastal dunes which have historically been maintained by periodic wild fires. When fire is suppressed in gopher tortoise habitat, small trees, shrubs, and brambles begin to grow making it difficult for the gopher tortoise to move around and eventually shade out the low growing plants that gopher tortoises eat.

Gopher tortoises have adapted to living in dry habitats with frequent fire occurrence by digging burrows deep into the sandy soil. The burrows, which average 15ft long and 6.5ft deep, provide the gopher tortoise with refuge from wildfires as well as heat, cold, drought, and predators. However, development pressures, fire suppression, and human predation have significantly reduced the species throughout its range. The gopher tortoise is currently listed as a threatened species by the State of Florida” and is Federally listed as Threatened west of the Mobile and Tombigbee Rivers in Alabama, Mississippi and Louisiana. It is presently under review for Federal listing in the eastern part of its range including Florida.

“These reptiles feed on low-growing plants like wiregrass, broadleaf grasses, and legumes (bean family plants). They also eat prickly pear cactus, blackberries, paw-paws, and other seasonal fruits. In addition to needing open areas with abundant food, gopher tortoises require relatively deep, sandy soils for burrowing and sunny spots for laying eggs.

Of the animals tied to the sandhill community, the gopher tortoise may be most crucial for contributing to biodiversity. A trait of the gopher tortoise is that it shares its burrow with more than 350 other species, including burrowing owls, Florida mice, eastern indigo snakes, opossums, rabbits, gopher frogs, Florida mice, eastern diamondback rattlesnakes and gopher crickets. For this reason it is called a keystone species, so named because the upper stone in an arch, the keystone, supports the other stones to hold them in place. Animals which utilize the gopher tortoise burrows are known as commensal species. Since many commensal species depend on the burrows for survival, decreases in gopher tortoise populations result in a decline of other species.” (http://myfwc.com/WILDLIFEHABITATS/SpeciesInfo_GopherTortoise.htm) The Federally Threatened eastern indigo snake is tied to gopher tortoises and their burrows, especially in the Florida panhandle and other northern parts of its range.

There are three priority areas that we will focus on with the present funding: the Bradwell Game Farm, the Black Creek Tract and a small portion of the Munson Sandhills. We will also identify and improve other areas as time, personnel, and funding allow.

The Bradwell and Black Creek Tracts were in private ownership until fairly recently. The previous owners were not managing for biodiversity or using frequent prescribed fire. The Forest Service has not yet been able to restore either site. The Bradwell Tract has been burned at least twice since the Forest Service received this parcel but it did not burn well due to the existing conditions of dense pine plantations and hardwood encroachment. The present vegetative conditions on the Black Creek Tract will also not likely burn well enough for rapid restoration. It appears that prescribed fire alone may not be able to achieve the desired future condition and restore these areas into the best possible habitat for rarer species such as gopher tortoises and eventually eastern indigo snakes.

Gopher tortoises are present on the Bradwell Tract but are continuing to lose habitat due to ongoing hardwood encroachment and closure of the pine canopy. More aggressive management is needed to maintain and grow this population. Exclosures have been erected in an attempt to increase tortoise reproduction by preventing predator access to the burrow or eggs but additional suitable burrow and foraging habitat also needs to be provided. There is also a separate timber management proposal to open up some of the pine plantation canopies (Bradwell Game Farm EA). This proposal is limited to avoid archeological resources.

The Black Creek Tract presently has a few scattered gopher tortoises that are hanging on in remnant openings. Soils and patches of remaining herbaceous vegetation indicate that the majority of the area is appropriate. Some other form of vegetation management, in addition to prescribed fire, would be needed to begin growing a population here.

The Munson Sandhills area of the Forest is known to offer relatively good gopher tortoise habitat throughout. Some areas may be considered optimum but other areas need more habitat management. The past circumstances that led to relatively infrequent burning during the dormant season have allowed hardwood encroachment to occur in parts of the Sandhills. Many areas were maintained adequately with burning and much headway has been made in recent years with increased frequency and application in the growing season. But there are still some areas needing additional management techniques applied, such as herbicide, in order to achieve the desired future condition.

Some of the proposed treatment areas are known to or potentially have archeological sites that can not be disturbed unless their significance has been evaluated and documented. This evaluation process could take years. Therefore, these habitats could not be quickly restored if ground disturbing methods of vegetation manipulation were proposed. Even if the sites could under go evaluation in a reasonable amount of time, some would still need to be avoided with equipment. These avoided acres may never be restored with burning alone or the time frame burning could take would be too long to meet the Purpose and Need of the proposed project. Additionally, some mechanical methods can reduce the herbaceous vegetation, therefore, this possibility of impact would also not meet the Purpose and Need for the proposal.

C. Scope of Environmental Analysis

The Forest Plan established the desired condition through land management direction. This includes Forest-wide management requirements and management area prescriptions, with their corresponding directions and standards and guidelines. Forest Plan Page 3-23.

Risk assessments (SERA 2002, 2003, 2004, 2005) of proposed herbicides have been prepared for the Forest Service by Syracuse Environmental Research Associates (SERA) and incorporated by reference. These assessments include new information gathered since 1989 and further supplement and support the findings of the Final Environmental Impact Statement Vegetation Management in the Coastal Plain/Piedmont (VMEIS CP/P).

The EA for this project presents a proposed action and alternative to meet the desired condition of the Forest Plan. The EA displays the direct, indirect, and cumulative environmental effects of the proposed action and alternative.

D. Decision to Be Made

Given the Purpose and Need, the Responsible Official will review the Proposed Action and the No Action alternative. The responsible official would make the following decision:

1. Take No Action at this time – Alternative A or
2. Implement the Proposed Action – Alternative B.

E. Public Involvement

The proposal was provided to the public and other agencies in an initial scoping letter dated September 24, 2009. No comments were received. In addition, this project was listed on the Schedule of Proposed Actions (10/2009). This schedule is available on the National Forests in Florida website.

A Request for Comments was published as a legal notice in the Tallahassee Democrat and Calhoun-Liberty Journal on XX 2009.

On XX 2009 notification that the draft EA was available on-line for review was mailed to the same individuals who received the initial scoping letter. Comments are summarized in Appendix D.

F. Relevant Issues

The Forest Service separated the issues into two groups: significant and non-significant issues. Significant issues were defined as those directly or indirectly caused by implementing the proposed action. Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence [40 CFR, 1501.7 (2)].

The interdisciplinary team (IDT) identified the following significant issues. These issues were used to develop the action alternative, develop site-specific coordination measures, or as a basis to analyze effects.

1. Biological Environment:

A. Effects on Vegetation

1. Proposed, Endangered, Threatened, Sensitive (PETS) and/or Management Indicator Species (MIS) plants may be affected by no action or action alternative.

B. Effects on Wildlife

1. Proposed, Endangered, Threatened, Sensitive and/or Management Indicator Species animals may be negatively affected by the no action or action alternative.
2. Use of herbicides may have a direct effect on wildlife (toxicity).

2. Physical Environment

A. Effects on water quality

1. Use of herbicides may negatively affect water quality.

3. Socio Economic Environment

A. Effects on Human Health and Safety

1. Herbicide use may adversely affect the health of forest users.

B. Effects on Visual Quality

1. Management actions may have adverse effects on visual quality.

G. Other Issues

Other issues identified during internal and external scoping were reviewed by the ID Team and are paraphrased in this section. Following the CEQ regulations (1500.4 (c)(g), et. al., we discuss these issues only briefly here and they will not be covered again in order to emphasize the issues most useful to the decision maker and the public.

Use of Burning Alone: The use of fire can be a viable option for control of hardwoods. However, the application of fire as a vegetation control method has been approved through another evaluation process and is also part of the No Action Alternative of this document.

Effects on soil productivity: Important factors to consider in evaluating impacts upon the soil resource are erosion and compaction. Based on specific mitigation measures found in, but not exclusive to Chapter II, Vol. 1 (pp. II-57-65) and Appendix A of the VM-FEIS CP/P ROD and Best Management Practices (BMP'S) for the State of Florida, compaction or rutting is not expected to occur in the treatment area or in the travel way to the treatment area. Long-term soil productivity would not be affected by erosion or loss of surface horizons through the use of treatment equipment.

“There is, however, a general consensus that herbicide usage at normal forestry rates does not reduce the activity of soil micro-organisms. There is no evidence that the herbicides currently in forest management in the South produce any adverse effects on site and soil productivity. There is evidence that herbicide usage as a silvicultural tool can increase site productivity” (Appendix C, VMEIS CP/P). Herbicides do not disturb the soil surface, thus the soil erosion is limited to natural processes.

Effects on Air Quality: The Federal Clean Air Act stipulates that Federal agencies have an affirmative responsibility to protect a Forest's air quality from adverse air pollution impacts. The Proposed Action would not have the potential to noticeably change the air quality of the treatment areas or of the Forest as a whole. Any emissions from the use of motorized vehicles would be considered negligible at most. In addition, none of the proposed activities or alternatives would result in the generation of fugitive dust emissions in the project areas. Therefore, air quality is not discussed further in this EA.

Effects on Heritage Resources: The project has been designed to have "no effects" on heritage resources and follows Forest Plan guidance. **HE-13** "Minimize or avoid management activity impact on the site. For example, chemical site preparation might be used as a silvicultural alternative to mechanical site preparation" (pg 3-6).

CHAPTER II. ALTERNATIVES CONSIDERED

A. Introduction

Coordination measures were developed to respond to the issues identified during the scoping process. Forest Plan management requirements and standards and guidelines as well as relevant measures from the Record of Decision for the VMEIS CP/P are incorporated into the design of the proposed alternative.

B. Description of Alternatives

Alternative A: No Action

The first is the No Action Alternative, required by NEPA and defined as a continuation of current management activities in the project area. Actions approved under other existing environmental documents would continue to be implemented, this includes among other activities, prescribed burning.

Alternative B: Proposed Action

The Forest Service proposes to utilize herbicide on under- and midstory hardwoods to begin and continue restoration and habitat improvement for gopher tortoises on priority acres within those areas with suitable soils on the Apalachicola and Wakulla Ranger Districts (Maps 1 and 2, suitable soils). Not all acres with suitable soils would need treatment, most offer appropriate habitat already as a result of effective prescribed burning. Smaller subsets (priority acres/areas) would be identified within the suitable acres for herbicide treatment as the project progresses through time. These treatment areas would be separated by time and space.

Once the herbicide treatment has achieved the desired conditions (more than one treatment may be needed), prescribed fire would be used for maintenance and further improvement. The priority acres to be treated would be either existing gopher tortoise habitat that is rapidly degrading or have a high potential to become habitat if the hardwoods are reduced, and the additional sunlight reaching the ground along with prescribed fire encourages herbaceous groundcover.

Only Forest Service approved herbicides would be used. Labeling instructions and

precautions would be followed. The herbicide application would be managed by a Forest Service employee that is a Certified Pesticide Applicator and also certified to oversee contracts. The Forest Service uses mixes and concentrations lower than the maximum allowed. Selective methods that may be employed would include directed foliar spray, stem injection, basal spray, cut-surface treatment, and soil spot treatments. No aerial or aquatic applications would be involved. Herbicides being considered for use include hexazinone, glyphosate, imazapyr, and triclopyr.

As stated above, the proposal is not to treat all suitable acres but as the project goes through time and funding is available subsets of priority acres would be identified and treated. There are three priority areas that we would focus on with the present funding; these areas currently either have gopher tortoises that are rapidly losing habitat or have suitable soils but no gopher tortoises due to hardwood encroachment.

The current priority areas being considered are: the Black Creek Tract and stands to the west up to State Route 375, T2S, R4W, Sec 13, 18 (1000 acres, Map 3), Bradwell Game Farm, T1S, R4W, Sec 19, 20, 30 and T1S, R5W, Sec 24, 25 (300 acres, Map 4) and 2000 acres in the Munson Sandhills, T2S, R1W, Sec 6, 7 and T2S, R2W, Sec 1 (Map 5). All acreages are preliminary estimates.

Before treatment all identified priority acres would be mapped. The kind of herbicide that would be used on those acres would be determined depending on the type and current condition of the vegetation. A Pesticide Use Proposal must be completed for each mapped area. Any circumstances that require special considerations, including but not limited to the proximity of private land, water or wetlands, and threatened or endangered species would be recorded and mitigation implemented. Herbicide would not be applied within 100 feet of private land unless written permission is received from the land owner.

C. Coordination Measures for Action Alternative

Here, coordination measures are defined as actions taken to avoid, minimize, reduce, or eliminate adverse effects of implementing the proposed action or alternative action. Measures that apply are found in, but not exclusive to Appendix A of the Record of Decision (ROD) for the VMEIS CP/P; Best Management Practices (BMP) for the State of Florida, and the Forest Plan. Monitoring and determination of what measures would be needed is done through site-specific analyses with a Pesticide Use Proposal, onsite inspections, and post-treatment evaluations. Relevant standards and guidelines that are in addition to measures in the ROD, BMPs, and Forest Plan would also be followed.

Vegetation, including PETS:

Comply with an approved Pesticide Use Proposal form, ([Appendix C](#)). Use the herbicide in accordance with the registration label. The Pesticide Use Proposal assessment would determine if a priority area specific biological evaluation is necessary. If needed, the biological evaluation would determine the effects on plant species of concern and would contain mitigation measures to avoid negative impacts to these species. It is not anticipated additional biological evaluations would be needed. No application would be applied within 60 feet of proposed, endangered, threatened or sensitive plants.

Wildlife, including PETS:

Comply with an approved Pesticide Use Proposal form, ([Appendix C](#)). Use the herbicide in accordance with the registration label. The Pesticide Use Proposal assessment would determine if a priority area specific biological evaluation is necessary. If needed, the biological evaluation would determine the effects on animal species of concern and would contain mitigation measures to avoid negative impacts to these species. It is not anticipated additional biological evaluations would be needed.

Water:

Do not apply herbicide to standing or moving water.

Public Health and Safety:

Comply with approved Pesticide Use Proposal form ([Appendix C](#)) and use herbicides in accordance with registration label. Place signs in campgrounds, trail heads, and other high use areas before herbicide treatment. Herbicide notice signs (FSH 7109.11) would be clearly posted, and would include the application date, the herbicide, and safe reentry date. Areas could be roped off if needed. Private lands would not be treated. No herbicide would be applied within 100 feet of private land.

The Pesticide Use Handbook, FSH 2109.14 and the Health and Safety Code Handbook, FSH 6709.11 would be used as guidance for workers. Workers who apply herbicides would be trained to ensure minimum impacts and maximum effectiveness. Only those methods that assure proper application of herbicides would be used. Herbicide application by contract and/or in-house personnel would be performed by or directly supervised by the holder of a current federal Pesticide Applicator's license following all current legal application procedures administered by the USDA Forest Service and the label on the herbicide container.

The Contracting Officers Representative and/or Inspector will be given a copy of the measures in Appendix A of the ROD.

D. Monitoring and Evaluation

Monitoring and evaluation of the Forest Plan is required by the National Forest Management Act (NFMA). The Forest Service monitors activities, practices, outputs, and services identified in the Forest Plan in order to determine if: the goals and objectives of the Forest Plan are appropriate; management practices are effective in meeting the intent of the standards and guidelines; and the projects were implemented according to direction. Evaluation of the results identifies changes needed to better achieve objectives.

A periodic review would be made to insure that actions taken under this decision are implemented and within the scope of the original analysis and that the environmental consequences are as anticipated by the EA. The Pesticide Use Proposal in [Appendix C](#) is the primary means to document that each site meets the site conditions that were analyzed and evaluated in the EA. A project file would be set up to document and monitor operations conducted under this decision. Each site would be reviewed and certified as meeting the site conditions that were analyzed and evaluated in the EA prior to implementation of herbicide application operations. A record of this determination would be maintained in the project file

for the EA. Treatment falling outside the scope of this EA would require a separate evaluation and decision.

Weather is monitored and the project is suspended if temperature, humidity, or wind becomes unfavorable as follows: temperature greater than 98° F, humidity less than 20%, and wind speeds greater than 15 mph. Nozzles that produce large droplets or streams of herbicide are used. Nozzles that produce fine droplets are used only for hand treatment where distance from nozzle to target does not exceed 8 feet. Monitoring occurs via weather observation and supervision.

E. Alternatives Considered but Eliminated from Detailed Study

A mechanical alternative was discussed but this alternative would not fit the Purpose and Need of allowing rapid implementation due to necessary archeological review and evaluations. Known sites would have to be avoided as would any that may be found as part of a review for mechanical treatments. This archeological review could take a significant amount of time and any identified sites would have to be avoided with equipment, therefore, those habitat acres could not be included in the treatment. Additionally, some mechanical methods can reduce the herbaceous vegetation, therefore, this possibility along with the need to avoid archeological sites within gopher habitat does not meet the Purpose and Need for the proposal.

F. Comparison of Alternatives

Environmental effects by alternative are summarized below to allow quick comparison.

Table 1. Comparison by Alternatives

Resource	Alternative 1 No Action	Alternative 2 Proposed Action
Plant Species Diversity	Excessive hardwood cover would continue to interfere with ecosystem stability by threatening biodiversity.	Would potentially kill some individuals, but would not reduce genetic variation within species or variety among plant species.
Threatened and Endangered Plant Species	No effect.	No effect.
Sensitive Plant Species	May impact individuals but is not likely to cause a trend toward federal listing	May impact individuals but is not likely to cause a trend toward federal listing.
Toxicity to wildlife	Direct toxic effects are unlikely, no indirect or cumulative effects.	Direct toxic effects are unlikely, no indirect or cumulative effects.
Threatened and Endangered Animal Species	No effect.	No effect.
Sensitive Animal Species	May impact individuals but is not likely to cause a trend toward federal listing or Likely to result in a trend to listing or a loss of viability for some species.	May impact individuals but is not likely to cause a trend toward federal listing or beneficial or no effect depending on species.

Resource	Alternative 1 No Action	Alternative 2 Proposed Action
Water Quality	No direct, indirect or cumulative effects.	No direct, indirect or cumulative effects
Air Quality	No effect or slight and temporary.	No effect or slight and temporary.
Soil Productivity	May impact, with change of plant species dominance and changes in fire intensity.	No negative impact, may improve productivity in certain cases.
Visual Quality	Continuing negative impacts from degraded natural systems.	Temporary impacts with eventual improvement.
Heritage Resources	No effects.	No effects.
Civil Rights	No effects.	No effects.
Public Health and Safety	Risk to public health and safety are negligible.	Risk to public health and safety are negligible.

CHAPTER III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

A. Introduction

This chapter describes environmental effects likely to be caused by implementing either alternative (with mitigations applied to the Proposed). The Proposed Action contributes to the goals and objectives established in the Forest Plan and by the Florida Fish and Wildlife Conservation Commission.

B. Biological Environment

The general biological community that occurs within the sandhill land type association is typical of the southern Coastal Plain. Because it would not be feasible to monitor the effects of management on all plant and wildlife species, certain species were chosen to be “management indicators”. Management indicator species (MIS) are selected to monitor the effectiveness of the Forest Plan direction in meeting the desired habitat conditions and plant/animal outcomes. Population changes in these selected species are believed to indicate the effects of management. Forest wide population trends for management indicator species can be found in the 2007 Annual Monitoring and Evaluation Report for the National Forest in Florida available on the Website <http://www.fs.fed.us/r8/florida/>

1. Effects on Vegetation

Current Situation

Through an ecological classification system developed by the Forest Service, the lands on the National Forests in Florida have been assigned to Land Type Associations (LTA). This system uses soils, vegetation, and topography to identify and delineate areas of ecological similarity. The Forest Plan recognizes five LTAs on the Apalachicola NF, (USDA, 1999, D-4-5). The treatments would occur predominately in the Munson Sandhills and the Apalachicola Depressions and Uplands LTAs.

To a large extent these LTAs are in fairly good ecological shape and natural processes are occurring but in important pockets, due to varying circumstances, the existing habitat is degraded. Encroachment of hardwoods has altered the native plant community of the historic longleaf ecosystem as well as the fuel loads and fire intensity. This encroachment and the ensuing lack of herbaceous vegetation have reduced the quality and usefulness of the areas for other native species.

The current threatened and endangered species listing maintained by the U. S. Fish and Wildlife Service, the Regional Forester's list of Sensitive species, and the Forest Plan have been reviewed. The threatened and endangered plants that occur on the Apalachicola NF are not found on the drier soils of the proposed project areas. A Biological Evaluation (BE) has been completed. A discussion of PETS species is found in the BE ([Appendix](#)). The determinations of effects for those species are summarized below.

Issue # 1: Proposed, Endangered, Threatened, Sensitive and/or Management Indicator Species plants may be affected by the no action or action alternative.

Alternative A– No Action

Endangered and Threatened Plant Species

Implementation of the No Action alternative would have No Effect on threatened or endangered plants because the project would not occur in their habitat.

Sensitive Plant Species

Those sensitive species that occur in sandhill type habitat are being impacted by the existing and continuing hardwood encroachment and shading. Most of the plant species, especially the rarer ones, on the Apalachicola NF are light dependent and will only thrive under more open canopy conditions. If any of these species are still present in the project areas we would expect to see a continued reduction in their numbers.

Plant Management Indicator Species (MIS)

Species not selected as MIS for this project are Curtis dropseed, Florida dropseed, Florida skullcap, Godfrey's butterwort, Harper's beauty, toothache grass, white birds-in-a-nest, and Xyris stricta. They were not selected because activities would not occur in their habitat and/or the ecological community they represent will not be changed.

The two MIS that occur in sandhill type habitat, pineywoods dropseed and wiregrass, are being impacted by the existing and continuing hardwood encroachment and shading. Most of the plant species, especially the rarer ones, on the Apalachicola NF are light dependent and will only thrive

under more open canopy conditions. We expect to see a continued reduction in the occurrence of the two MIS plants due to the habitat conditions.

Alternative B – Proposed Action

The herbicides glyphosate, hexazinone, imazapyr and triclopyr are proposed for use.

Glyphosate: This semi-selective, broad-spectrum herbicide controls most annual and perennial plants, but it is generally most phytotoxic to annual grasses. Selectivity is achieved by directing the spray only at target plants. Glyphosate has no soil activity. It is decomposed by microbial activity with a moderate half-life of around 60 days. Persistence and mobility are low. Glyphosate is strongly adsorbed to soil particles and organic matter and tends to adhere to sediments when released into water. It is deactivated rapidly by muddy water or water with high calcium content. Glyphosate is one of the most commonly used herbicides in natural areas, because it provides effective control of many species.

Hexazinone is a generally selective, broad-spectrum herbicide that can control annual and perennial herbaceous broadleaf species, some grasses, and most hardwoods. It is a photosynthetic inhibitor, readily absorbed through roots and, to a lesser degree, through foliage. Foliar absorption can be greatly enhanced by the addition of a nonionic surfactant. Hexazinone is soil active and tends to be highly mobile, especially in porous soils with percolating water. Mobility is strongly influenced by soil texture; high clay or organic matter content retards movement and reduces efficacy. Application rates must be adjusted to suit soil texture. It should not be applied to saturated or poorly drained soils. Hexazinone degrades rapidly via soil microbes; the reported half-life is 1-6 months, although it is typically 90 days.

Imazapyr: This is a selective, broad-spectrum herbicide that provides pre- and post-emergence control, including residual control, of a variety of annual and perennial grasses, as well as most hardwoods. Imazapyr's mode of action is as a plant protein production inhibitor. Effects on treated vegetation appear very slowly; so the visual impact is low. This herbicide is soil active; however its soil mobility is relatively low. Imazapyr appears to bind loosely to clay particles and organic matter. Soil activity expresses itself during the period of spring leaf expansion; applications made from late June through mid-September produce little or no evidence of soil activity. Application after mid-September may yield residual soil activity during the following spring. Imazapyr is moderately persistent with a half-life of 19 to 34 days; however soil residues may persist longer during periods of cold weather.

Triclopyr: This herbicide is semi-selective and especially useful for broad-leaf herbs and woody species. Grasses are generally tolerant and pines are tolerant of the amine formulation after resting buds are formed in late summer. The active ingredient is readily absorbed by foliage, with some stem uptake. It translocates up and down in plants, accumulating in growing tissues and the root collar. Triclopyr is not soil active and is generally non-mobile in soils. This herbicide has a moderately low half-life in soil of 10-46 days (average 30 days) and is degraded by both soil microbes and photolysis. Triclopyr amine is used as an injection or cut-surface treatment in site preparation and release, and as a foliar spray in rights-of-way or for hardwood control in conifer plantations.

The exact area and type of treatment would be determined following the results of site specific evaluation and mapping. Treatment would not occur in known threatened or endangered plant habitat. If sensitive species are found, herbicides would not be used within 60 feet. If wind speed is greater than 15 mph during hand treatment the project would be suspended to avoid damage to non-target species.

Threatened and Endangered Plant Species

Implementation of the Proposed Action (Alternative B) would have no effect on Harper's Beauty, White Birds-in-a-Nest, Godfrey's Butterwort, or Florida Skullcap.

Sensitive Plant Species

Implementation of the Proposed Action (Alternative B) may impact individuals but is not likely to cause a trend toward Federal listing or a loss of viability for sensitive plant species that may occur in the project areas. In the longer term this project would have beneficial effects. The project would reduce competition from the expanding hardwood cover. A slight risk remains that individuals may be impacted during treatments. However it is important to note that the overall effect of this alternative is beneficial since the proposed action would reverse the degradation due to hardwood encroachment and result in improved conditions.

Plant Management Indicator Species

The two MIS plants that occur in sandhill type habitat (pineywoods dropseed and wiregrass) are being impacted by the existing and continuing hardwood encroachment and shading. Most of the plant species, especially the rarer ones, on the Apalachicola NF are light dependent and will only thrive under more open canopy conditions. These two species are present in the project area and we would expect to see an increase in their density and occurrence after the initial impacts from the habitat improvement treatments proposed have subsided. Overall and in the long term the effects would be beneficial.

2. Effects on Wildlife

Issue #1: Proposed, Endangered, Threatened, Sensitive and/or Management Indicator Species animals may be affected by the no action or action alternative.

Alternative A– No Action

Threatened and Endangered Animals

Continued implementation of the No Action alternative would result in reduced habitat quality and quantity for the red-cockaded woodpecker (RCW), eastern indigo snake, or species upon which these threatened and endangered species depend. The No Action would be likely to adversely affect the RCW. Because recorded sightings of the eastern indigo snake are old and infrequent, this snake may no longer be present on the Forest, therefore, this alternative would have a no effect determination for the indigo snake. The determination of effect for the other Federally listed species would be no effect because they are also not likely to be in the project area.

Sensitive Animal Species

Implementation of the No Action alternative may result in reduced habitat quality or quantity for all of the terrestrial sensitive species assessed in the Biological Evaluation. However, the detrimental

effects of reduced habitat quality or quantity are not likely to cause a trend to federal listing or a loss of viability for any of the sensitive species assessed in the BE except for the gopher tortoise.

Animal Management Indicator Species

MIS animals identified in the 1999 Land and Resource Management Plan for the Apalachicola National Forest that were not selected for this project are: the bald eagle, largemouth bass, pileated woodpecker, and prothonotary warbler. They were not selected because activities would not occur in their habitat and/or the ecological community they represent will not be changed.

Animals that were selected as MIS for this project include: bobwhite quail, Florida black bear, red-cockaded woodpecker, white-tailed deer, and wild turkey.

Bobwhite quail -The No Action alternative would not benefit individual quail or local quail populations, as no new habitat for them would be created. This alternative is not likely to impact the declining trends seen in quail populations across its range.

Florida black bear-This alternative would not improve any additional habitat for the black bear. No food sources or denning opportunities would be created or reduced. Bears are generalists that use such a large, diverse land base that the affects of continued hardwood midstory in the sandhills is not possible to determine.

Red-cockaded woodpecker -This alternative would not promote the open park like stands preferred by the RCW and would not encourage expansion into these sites with dense midstory. It may negatively affect local RCWs by not providing for population expansion into areas currently not occupied but this alternative is not likely to impact current RCW population levels.

White-tailed deer-The No Action alternative would not affect individual deer or local deer populations as no new habitat would be created or improved.

Wild turkey-This alternative would not remove any late seral forest nor will it create any early seral habitat. Thus, it is not likely to impact population trends of wild turkey.

Alternative B– Proposed Action

Threatened and Endangered Animal Species

Implementation of the Proposed Action is not likely to adversely affect the RCW and would in the longer term have a beneficial impact on its habitat. There would be no effect on the eastern indigo snake due to the lack of any recent sightings on the Forest and questions if it is even still extant here. The project would also likely have no effect on the rest of the Federally listed species because it would not occur in or impact their habitat.

Sensitive Species and MIS Animals

Implementation of the Proposed Action is not likely cause a trend to federal listing or a loss of viability for any of the terrestrial sensitive species that could use this type of habitat. This alternative would also have a beneficial impact for gopher tortoises and their associates as well as the Florida black bear, Bachman's sparrow, and Florida pine snake. Herbicide application levels would be too low for a toxic dose to be achieved. Habitat conditions would be improved. There would likely be no impact or negligible impact on the rest of the terrestrial sensitive species and on aquatic species.

MIS Animals

Bobwhite quail-There should be no direct effects as a result of the activities of the proposed action since northern bobwhite quail are likely not using these areas and also if present they would leave temporarily once human disturbances began. Early-seral pine habitat creation and mature pine habitat in open conditions by herbicide would likely benefit individual quail by creating forage, cover, and nesting habitat. Thus, this alternative may benefit local quail populations. This alternative is not likely to impact the declining trends seen in quail populations across its range.

Florida black bear-This alternative would reduce cover and food sources. The food sources would be impacted temporarily. As a result of the proposed decrease of hardwood vegetation fruit and nut production may be lower than presently offered. As more light hits the ground and with frequent prescribed burning food sources would recover and become more diverse. This project may temporarily change an individual's home range but would not impact the population on the Forest.

Red-cockaded woodpecker-There would be no negative impacts to any individuals. There would be no direct effects to the RCW since treatment activities would be conducted during the non breeding season. Herbicide removal of undesirable midstory and understory for the gopher tortoise would also improve habitat for the RCW. It would produce the open park like stands RCWs prefer. They are more likely to utilize these areas and increase their population.

White-tail deer-No direct effects to white tailed deer are expected under this alternative since they are capable of anticipating and fleeing human disturbance. Reducing the midstory would improve the growth of high quality, shade-intolerant forage species, which would likely benefit individual deer by creating forage. If hardwood mast producing trees are treated with herbicide it can decrease food for deer, but bottomland hardwood trees would not be treated and selected hardwoods would be retained, so this effect would be minimal. This alternative is not likely to impact deer populations.

Wild turkey-There should be no direct effects as a result of the activities of the proposed action since eastern wild turkey would leave temporarily once human disturbances began. Herbicide treatment of midstory would create open habitat conditions dominated by grasses and forbs in the understory which would improve nesting and brood habitat. Treatment of mast producing hardwoods could reduce food for the turkey, but treatment is not planned in bottomland hardwoods and selected mast trees will be retained, which would reduce the amount of mast lost. This project may result in a slight increase in turkey numbers on the Forest as the habitat responds to treatment and becomes more useful.

Issue # 2: Use of herbicides may have a direct effect on wildlife (toxicity).

Alternative A – No Action

Implementation of the No Action alternative would not have any toxic effects on wildlife. The indirect effect of the No Action alternative would be to ultimately reduce the quality and quantity of habitat due to the loss of native herbaceous vegetation. Because no herbicides would be used there could be no chance of toxicity from their use.

Alternative B - Proposed Action

Glyphosate

Standard toxicity bioassays have been conducted on several wildlife species, including mammals, birds, fish, and some terrestrial and aquatic invertebrates. In addition, a number of field studies have been conducted on effects of glyphosate applications that are comparable or almost the same as those used by the Forest Service. The toxicity studies on terrestrial animals are generally consistent with those on experimental mammals. Although the mechanism of glyphosate toxicity is unclear, it can cause toxic effects including mortality at sufficiently high dose levels. The available field studies, however, clearly suggest that at plausible levels of ambient exposure, direct toxic effects are unlikely (SERA, 2003).

Imazapyr

For both aquatic and terrestrial animals, the weight of evidence suggests that no adverse effects are plausible using typical or even very conservative worst-case exposure assumptions. This characterization of risk must be qualified. Imazapyr has been tested in only a limited number of animal species and under conditions that may not well-represent populations of free-ranging target animals. Notwithstanding this limitation, the available data are sufficient to assert that no adverse effects associated with the toxicity of imazapyr can be anticipated in terrestrial or aquatic animals from the use of this compound in Forest Service programs (SERA, 2004).

Hexazinone

This herbicide is listed as low toxicity to humans and wildlife. Hexazinone is a photosynthetic inhibitor. Since humans or animals do not photosynthesize the active ingredient in this product should not affect them. This herbicide is relatively nontoxic to insects and practically nontoxic to birds, animals are physically unable to eat enough treated vegetation in a short enough time period to get a significant dose (SERA 2005).

Triclopyr

This herbicide is listed as having low to moderate toxicity to wildlife. In the risk assessments completed by SERA (2003) there was a concern that lethal doses could be achieved through consumption of contaminated vegetation at the maximum application rates. The proposed rate of application for this project would be on the lower end of the recommended label use. Animals are unlikely to be directly sprayed with herbicide because they would move away from the human activity and contractors would be instructed to not harass any wildlife. In addition to the laboratory bioassays and field observations on single species or related groups of species, there are a number of field studies that have assessed the effects of triclopyr on terrestrial organisms, both animal and plant. There is very little suggestion in any of the field studies that triclopyr had any direct adverse effect on terrestrial species and most reported effects may simply reflect changes in habitat secondary to vegetation management practices.

None of the herbicides proposed for use show tendency to bioaccumulation. Long-term persistence in food chains and subsequent toxic effects are not considered a problem (VMEIS CP/P). There are no indirect or cumulative toxic effects expected from the use of herbicides at the recommended rates.

C. Physical Environment

1. Effects on Water Quality

Issue #1: Use of herbicides to improve gopher tortoise habitat may negatively affect water quality.

Alternative A – No Action

The effects on water quality would occur only from existing conditions. Sediment levels currently being produced from roads, agricultural lands, and wooded tracts would continue.

Alternative B – Proposed Action

Sediment is one source of impact to water quality, specifically the amount of sediment delivered and stored within the stream channel. Sediment impacts are dependent on the amount of erosion produced by land disturbing activities, intensity and duration of storm events occurring during the activities, proximity of the activities to a stream course, and the amount of sediment actually moving into the stream channels and remaining stored. Erosion is not likely to occur within this alternative. There would be no cumulative effects of sedimentation on water quality. Sediment levels currently being produced from roads, agricultural lands, and wooded tracts would continue.

Direct effects of herbicide application are potential chemical contamination of surface waters and ground waters and indirect effects are potential increases in sediment and water yield. The proposed action poses little threat to the water resource because herbicide label directions and required mitigation measures would be followed.

The herbicide glyphosate biodegrades into naturally occurring elements with no residual soil activity. It binds tightly to soil so it will not leach or wash to contaminate ground water or off-site vegetation. The herbicide Accord is registered for use in and around wetland areas, such as marches and bogs (Forest Service, 1995). The VMEIS CP/P Aquatic Risk Analysis for glyphosate (Rodeo formulation) found no risk to aquatic species from a five gallon drum spill into a pond (VMEIS CP/P, Vol II, page 8-32). The direct, indirect, and cumulative effect on water quality from the use of this herbicide would be minimal to none.

Glyphosate

- **Solubility:** Glyphosate dissolves easily in water.
- **Potential For Leaching Into Ground-Water:** The potential for leaching is low. Glyphosate is strongly adsorbed to soil particles. Tests show that the half-life for glyphosate in water ranges from 35 to 63 days. The surfactant half-life ranges from three to four weeks. Not soil active; not mobile in soil. Glyphosate is strongly adsorbed to soil particles and organic matter; deactivated rapidly by muddy water or water with high calcium content. Decomposed by microbial activity; moderate half-life of about 60 days.
- **Surface Waters:** Studies examined glyphosate and aminomethylphosphonic acid (AMPA) residues in surface water after forest application in British Columbia with and without no-spray streamside zones. With a no-spray streamside zone, very low concentrations were sometimes found in water and sediment after the first heavy rain. Where glyphosate was sprayed over the stream, higher peak concentrations in water always occurred following heavy rain, up to three weeks after application. Glyphosate and AMPA residues peaked later in stream sediments, where they persisted for over one year. These residues were not easily released back into the water.

The herbicide imazapyr is soil active; however the soil mobility is relatively low. Imazapyr appears to bind loosely to clay particles and soil organic matter. Application made from late June through mid-September produces little or no evidence of soil activity. Application made after mid-September may result in residual soil activity during the following spring. The herbicide Arsenal is registered for use in and around wetland areas, such as marshes and bogs as long as application is not made to surface water (Forest Service, 1995). The VMEIS CP/P Aquatic Risk Analysis for imazapyr found no risk to aquatic species from a five gallon drum spill into a pond (VMEIS CP/P, Vol II, page 8-35)

Imazapyr

- **Solubility:** Imazapyr is soluble in water.
- **Potential For Leaching Into Ground-Water:** Imazapyr has a low potential for leaching into ground-water. Soils active; however soil mobility is relatively low. Imazapyr appears to bind loosely to clay particles and organic matter. Applications made from late June through mid-September produce little or no evidence of soil activity.
- **Surface Waters:** Imazapyr may move from treated areas in streams. Most movement of imazapyr was found in runoff from storms. Use of a streamside management zone can significantly reduce the amount of offsite movement of imazapyr in stormflow. The half-life of imazapyr in water is about four days. Moderately persistent in soil; half life is reported to be 19-34 days, but soil residues may persist significantly longer during periods of cold weather, low moisture, rainfall, and soil types. Decomposition is primarily by photolysis.

The herbicide hexazinone dissolves well in water, while the liquid formulation disperses in water. It is persistent and mobile in soils. This herbicide is susceptible to off-site movement by surface runoff and leaching, however it degrades fairly rapidly in natural waters.

Hexazinone

- **Solubility:** Highly soluble.
- **Potential For Leaching Into Ground-Water:** Hexazinone does not bind tightly to soil and thus has a high potential for movement via leaching or runoff. While there is little doubt that hexazinone will leach under conditions that favor leaching—sandy soil, a sparse microbial population, and high rainfall—the potential for leaching or runoff is functionally reduced by the relatively rapid degradation of hexazinone in soil. Soil mobility is relatively high, especially if percolating water is present. Hexazinone is primarily degraded through microbial metabolism in soils and sediments. It is not significantly affected by photo or chemical degradation. It is not readily adsorbed by sediments and can remain mobile in the environment until metabolized by microbes. The warm conditions in Florida accelerate this degradation.
- **Surface Waters:** Surface waters may be briefly contaminated if Hexazinone is applied to areas where runoff is likely to occur. The half-life in water can be greater than 56 days. Average soil half-life is 90 days. Breakdown is by soil microbes.

The herbicide triclopyr has a moderate to low solubility in water. Under normal conditions, its potential for leaching is low since it binds to clay and organic matter in soil. Sunlight rapidly breaks down triclopyr in water, with a half-life of less than 24 hours.

Triclopyr

- **Solubility:** Moderate to low.
- **Potential For Leaching Into Ground-Water:** The potential for leaching depends on the soil type, acidity and rainfall conditions. Triclopyr should not be a leaching problem under normal conditions since it binds to clay and organic matter in soil. Triclopyr may leach from light soils if rainfall is very heavy. Triclopyr is not soil active. Generally non-mobile in soils; but misapplications of Garlon 3A may show some mobility and non-target root uptake may contaminate ground water.
- **Surface Waters:** Sunlight rapidly breaks down triclopyr in water. The half-life in water is less than 24 hours (10 hr half-life at 25 ° C). Moderately short half-life of 10-46 days with an average of 30 day half-life; degraded both by soil microbes and by photolysis.

The greatest hazards to surface and ground water quality results from a possible accident or mishandling of concentrates during storage, transport, application, mixing and loading, clean up and/or container disposal. Contamination of regional ground water aquifers is not likely even with intensive operational use of silvicultural herbicides. Current herbicide application technology exists to minimize herbicide residue movement into sensitive surface waters. On-site degradation processes and in-stream dilution and degradation in streams result in quick dissipation of herbicide residues. Short-term water quality effects are minimal, and long term water quality is not adversely affected (VMEIS CP/P Appendix C).

Because the direct and indirect effects of this action would not have negative effects on the water resources, it is not expected that there would be any cumulative effects either. All other related impacts to the water resources would continue as usual with no change from or additions to resulting from the action alternative.

2. Effects on Visual Quality

Current quality objectives for the project area are considered from viewsheds of trails, roads and highways.

Issue #1. Management actions may have adverse effects on visual quality.

Alternative A – No Action

Hardwood encroachment would continue and further degrade the form and function of these longleaf habitats. Desirable longleaf forests are described as open with low midstories and herbaceous ground cover.

Alternative B – Proposed Action

Although herbicide treatment would cause browning, it would not be a feature that dominates the landscape. The dead material would gradually be replaced by more desirable native plants. Apalachicola NF vegetation is frequently brown as a result of the large prescribed fire program so this proposal would not cause any significant or unusual visual quality changes.

The direct, indirect, and cumulative effects on visual resources and therefore recreation potential would be minimal and temporary. Hunters would be beneficially served from the improvements to the gopher tortoise habitat because of the benefits for other species such as deer, turkey and quail.

The habitat improvements would benefit horseback riders, bird watchers, and hikers because of the gradual visual resource improvements.

D. Socio Economic Environment

1. Effects on Human Health and Safety

The VMEIS CP/P addressed the effects of herbicide use on human health as a significant issue and identified that many people feel herbicides may have serious effects on human health (VMEIS CP/P, Vol I, page v).

Issue #1: Herbicide use may adversely affect the health of forest users.

Alternative A – No Action

No herbicide use is proposed with the No Action. There would be no potential for effects to human health from herbicide use under this alternative.

Alternative B – Proposed Action

The action alternative proposes the use of herbicides for woody plant control. The herbicides used would be based on the evaluation form prepared from the site visit. Herbicides of choice are glyphosate, hexazinone, imazapyr, and triclopyr. Use of any of the proposed herbicides is expected to be on small localized and widely separated areas in time and space and due to the short half lives and fast biodegradability of proposed products, there is a very low probability of prolonged exposure and risk.

Potential human health effects from chemical vegetation control methods are evaluated by extensive testing on laboratory animals for the Environmental Protection Agency (EPA) herbicide registration and re-registration in the U. S. The herbicides are tested as they would be purchased off the shelf rather than individually testing ingredients contained in the herbicide.

The herbicides analyzed here have been subjected to long-term feeding studies. These studies test for acute, subacute, and chronic toxicity by way of general systemic effects, such as kidney and liver damage, and effects on reproductive systems, mutagenicity (birth defects), and carcinogenicity (cancer causing). No-observed-effect-levels (NOEL) are available for most types of tests. A NOEL is the highest dose in a particular test that did not result in adverse health impacts to the test organism.

Extrapolating a NOEL from an animal study to humans is an uncertain process. To compensate for this, the EPA divides NOELs from animal studies by a safety factor of 100 or 1000. This adjusted dose level, referred to as the Acceptable Dose Intake (ADI), is used to decide how much residue can be allowed in foods or drinking water, which may contain residues. It is presumed by the EPA to be a dose that is safe even if an average-sized person received it everyday for a lifetime.

The ADI is a convenient comparison point for determining the significance of doses that people might receive from this implementing this project. Any potential doses to the general public would be below the ADI for the herbicides of concern.

Worker doses for glyphosate, triclopyr, hexazinone and imazapyr would be below the ADI if reasonable safety precautions are used as described under Mitigation (Chapter II, Section C and Appendix A of the VMEIS CP/P ROD).

Herbicide labeling, which governs the types of uses, disposal, precautions for use, etc., is regulated by the EPA in accordance with FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act of 1947, with numerous additions). Based on tolerances, residue data, and environmental fate, label-use restrictions may be placed on an herbicide label.

Herbicides approved by the EPA would be used. All label requirements would be followed, as required by the EPA. Following the label insures that the public will not come in contact with herbicide concentrations that may cause harmful effects.

Herbicide applications would be supervised by Certified Pesticide Applicators. Contractors would be under the supervision of the Forest Service Contracting Officer's Representative (COR), who would also be the holder of a current Federal pesticide applicator's license. This employee would ensure compliance with labeling instructions and safety methods to reduce the risk of accidents.

Risk to public health from herbicide applications has been addressed in a Risk Assessment as part of the VMEIS CP/P (Vol II, Appendix A) and supplemented by the analyses done by Syracuse Environmental Research Associates (SERA 2002, 2003a, 2003b, 2004, 2005) They document the probable effects on human health (and wildlife) resulting from typical and maximum applications, and accidental spills of herbicide. They analyze the potential for these herbicides to cause toxic effects, cancer, mutations, and birth defects. Based on the Risk Assessment in the VMEIS CP/P, the Regional Forester concluded in the Record of Decision (page 12) for the VMEIS CP/P that application of these herbicides, when applied under the guidelines described, provided greater health protection to workers, the public, and wildlife, than is required by published health and safety standards. Applied under the guidelines, these herbicides do not pose a significant risk to human health. These guidelines are found in Appendix A of the Record of Decision (ROD) for the VMEIS CP/P.

If label directions are not followed properly, these herbicides could cause eye and skin irritations to workers. The Apalachicola NF uses the lowest rate possible to meet its goals. For a typical application, the use of these chemicals poses a low risk to safety. Under the conditions of typical public exposure to glyphosate, triclopyr, hexazinone and imazapyr, no member of the public would be affected (VMEIS CP/P, Vol I, page IV-14).

Glyphosate, triclopyr, hexazinone and imazapyr herbicides are soluble and do not accumulate in human or animal tissue. Human and animal exposure and risk studies conducted for, or cited in, the VMEIS CP/P indicate that cumulative build up effects on human health do not occur when used at prescribed rate with appropriate application methods.

In summary, risks to public health and safety under the Proposed Action are negligible.

2. Economics

Excessive hardwood encroachment can cause serious impacts on ecosystem and other associated

intrinsic values including species biodiversity; ecosystem goods for human consumption (forest products, fish, game, and pharmaceuticals); aesthetics (wildlife viewing, natural scenery, and spiritual values); watershed protection; nutrient cycling; and soil formation. Economic impacts of environmental damage to ecosystems are poorly documented because of the difficulty in placing monetary costs to ecosystem value.

Alternative 1- No Action

Employment opportunities and direct costs would be the lowest of the two alternatives; indirect costs would be the highest. In the short term, there would be negligible to no costs associated with this alternative. Costs for hardwood control and habitat restoration would increase exponentially the longer management is postponed. Losses to ecosystem values, most of which do not have a monetary figure attached, would be great. Revenue and returns to counties could decline over time and are the lowest of either alternative. This decline could be from reduced pine timber harvest due to competition from hardwoods. Also tourist dollars would have no reason to increase.

Alternative 2 – Proposed Action

Effects on Outputs and Costs are summarized in Chapter IV, pages 118-120 of the VMEIS CP/P and are as follows: employment opportunities and direct costs would be the higher of the two alternatives, indirect costs would be the lower. Restoring wildlife and plant habitat and therefore increasing populations could reduce the loss of or even increase consumptive recreation expenditures (hunting and fishing licenses, guns, ammunition, user fees, lodging, gas, and food) and non-consumptive expenditures (lodging, camping equipment, and photographic supplies). The proposed action alternative would result in public benefits, such as but not limited to, increased native biodiversity, ecosystem health, and other associated intrinsic values. Such benefits cannot be assigned a dollar value. Short-term employment would be similar to the current situation but with a few additional temporary jobs created for the manual treatments. This project would not have a measurable impact on local employment.

E. Effects on Civil Rights/Environmental Justice

The effects of these management actions would be fairly distributed among people without regard to race, color, religion, sex, national origin, age, or handicapping conditions. Neither benefits nor negative impacts would fall disproportionately upon anyone because of these factors.

F. Irreversible and Irretrievable Commitment of Resources

An irreversible commitment of resources refers to resources that are renewable only after a long period of time (such as soil productivity) or are non-renewable resources (such as cultural resources and minerals). There would be no irreversible commitment of resources under any of the alternatives in this analysis.

An irretrievable commitment of resources refers to losses of productivity or the use of renewable resources. This represents opportunities foregone for the period of time that the resource cannot be used. There would be no irretrievable losses of resources under either of the alternatives in this analysis.

CHAPTER V. AGENCIES, NON-GOVERNMENT ORGANIZATIONS OR PERSONS CONSULTED OR CONTACTED

The following individuals participated in the environmental analysis and preparation of the assessment:

Interdisciplinary Team Deciding Official:

- Marcus Beard, District Ranger, Apalachicola National Forest

Interdisciplinary Team:

- Susan Fitzgerald, Wildlife Biologist, Team Leader
- Gary Hegg, District Silviculturist, NEPA Coordinator/Certified Pesticide Coordinator
- Chuck Hess, Wildlife Biologist
- Renee Ripley, Wildlife Technician
- Mary Owen, Fire Planner

Contributors to the Analysis:

- Andrea Repp, District Archeologist
- Steve Parrish, District Fire Management Officer
- David Harris, Forest Planning
- Paul Mistretta, R8 Plant Pathologist
- Diane Tyrone, Wildlife Biologist, Desoto National Forest, MS

The Forest Service consulted with or contacted the following federal, state and local agencies, tribes, organizations and individuals during the development of this environmental assessment:

Federal, State, and Local Agencies

- Florida State Division of Forestry
- Florida State Division of Historical Resources
- US Fish and Wildlife Service
- Florida Fish and Wildlife Conservation Commission

Tribes

- Kialegee Tribal Town
- Miccosukee Indian Tribe
- Mississippi Band of Choctaw Indians
- Choctaw Nation of Oklahoma
- Chickasaw Nation
- Alabama-Quassarte Tribal Town
- Seminole Tribe of Florida
- Seminole Nation of Oklahoma
- Poarch Creek Indians

- Muscogee (Creek) Nation

Others

- Apalachicola National Forest Interested Public Mailing List

CHAPTER VI. REFERENCES

Bailey, M.A., J.N. Holmes, K.A. Buhlmann, and J.C. Mitchell. 2006. Habitat Management Guidelines for Amphibians and Reptiles of the Southeastern United States. Partners in Amphibian and Reptile Conservation Technical Publication HMG-2. Montgomery, AL.

Daily, Gretchen et al. nd. Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems. Issues in Ecology. <http://www.ecology.org/biod/value/EcosystemServices.html>. (9 Sept. 2001).

Florida Division of Forestry. Silviculture Best Management Practices. 2004. Florida Department of Agriculture and Consumer Services. Tallahassee, FL.
http://www.fl-dof.com/forest_management/bmp/index.html

Florida Fish and Wildlife Conservation Commission. 2009. The Gopher Tortoise.
http://myfwc.com/WILDLIFEHABITATS/SpeciesInfo_GopherTortoise.htm

Hull, Bruce, Sarah F. Ashton, Rien M. Visser, and Martha C. Monroe. 2008. Forest Management in the Interface: Amenity Resources. University of Florida, IFAS Publication # FOR 175.
<http://edis.ifas.ufl.edu/FR233>

Langeland, Ken, ed. 1990. "Exotic Woody Plant Control." IFAS Circular 868. University of Florida, Gainesville. <http://www.uflib.ufl.edu/ufdc/?m=hdFC&i=75988>

(SERA) Syracuse Environmental Research Associates. 2002. Neurotoxicity Immunotoxicity, and Endocrine Disruption with Specific Commentary on Glyphosate, Triclopyr, and Hexazinone: Final Report. Submitted to USDA Animal Plant Health Inspection Service, Riverdale, MD.

SERA, Syracuse Environmental Research Associates, Inc. 2003a. Human Health and Ecological Risk Assessment for Glyphosate (Accord, Rodeo, Roundup, and Roundup Pro) Final Report. PO # 43-1387-2-0238, Task #9, Submitted to: Forest Service March 1, 2003.
<http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>

SERA, Syracuse Environmental Research Associates, Inc. 2003b. Human Health and Ecological Risk Assessment for Triclopyr: Final Report. PO # 43-1387-2-0245, Task #13, Submitted to: Forest Service on March 15, 2003.
<http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>

SERA, Syracuse Environmental Research Associates, Inc. 2004. Human Health and Ecological Risk Assessment for Imazapyr (Arsenal, Chopper, and Stalker Formulations) Final Report, PO # 43-1387-3-0716, Task # 17, Submitted to: Forest Service on December 18, 2004.
<http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>

SERA, Syracuse Environmental Research Associates, Inc. 2005. Human Health and Ecological Risk Assessment for Hexazinone: Final Report. PO # 43-1387-3-0717, Task #20, Submitted to: Forest Service on October 25, 2005. <http://www.fs.fed.us/foresthealth/pesticide/risk.shtml>

USDA Forest Service. 2008 Annual Monitoring and Evaluation Report National Forests in Florida. US Department of Agriculture, Forest Service, Tallahassee, FL.

<http://www.fs.fed.us/r8/florida/apalachicola/resources/planning.php?p=1.1.6.1>

USDA Forest Service. 1999. Revised Land and Resource Management Plan for the National Forests in Florida, Management Bulletin R8-MB-83A; US Department of Agriculture, Forest Service, Tallahassee, FL.

<http://www.fs.fed.us/r8/florida/apalachicola/resources/planning.php?p=1.1.6.1>

USDA Forest Service. 1999. Final Environmental Impact Statement for the Revised Land and Resource Management Plan for the National Forests in Florida. Management Bulletin R8-MB-83B. US Department of Agriculture, Forest Service, Tallahassee, FL.

USDA Forest Service, Southern Region. 1989a. Record Of Decision, Final Environmental Impact Statement Vegetation Management in the Coastal Plain/Piedmont. Atlanta, GA.

USDA Forest Service, Southern Region. 1989b. Final Environmental Impact Statement Vegetation Management in the Coastal Plain/Piedmont. Volumes 1 and 2. Atlanta, GA.

<http://www.fs.fed.us/r8/planning/index.php>

USDA Forest Service, Southern Region. 2002. Record Of Decision, Supplement to the Final Environmental Impact Statement Vegetation Management in the Coastal Plain/Piedmont. Volumes 1 and 2. Atlanta, GA. <http://www.fs.fed.us/r8/planning/index.php>

USDA Natural Resource Conservation Service. Soil Survey of Liberty County, Florida (2007), Franklin County, Florida (1994) and Wakulla County, Florida (1991)

http://soils.usda.gov/survey/online_surveys/florida/

USDA Natural Resource Conservation Service. 1981. Soil Survey of Leon County, Florida. Only available hardcopy.

USDI Fish and Wildlife Service. 1990. Gopher Tortoise Recovery Plan. Jackson, MS.

http://ecos.fws.gov/docs/recovery_plans/1990/901226.pdf

Wunderlin, R.P. 1997. *Guide to the Vascular Plants of Florida*. University Press of Florida, Gainesville, Florida.

APPENDIX A - Pesticide Emergency Spill Plan

NOTE: Field personnel transporting or working with pesticides should familiarize themselves with this plan, as well as with the labels and Material Safety Data Sheets (MSDS) of all pesticides to be used in a project. A copy of this plan is to be carried to the field by all crews working with pesticides; a copy is also to be kept in an easily accessible location near the telephone at the district dispatch, work center, or reception desk.

Emergency procedures to follow when a pesticide spill occurs at the work site or when transporting pesticides to and from the work site:

1. PROVIDE FOR CARE OF INJURED OR CONTAMINATED PERSONNEL

Immediately determine if any personnel are injured or contaminated. Each situation may differ, but the major and immediate effort should be to assist injured personnel and minimize further contamination. Accordingly, the following must be accomplished as rapidly as possible.

If a fumigant or dangerous vapor is involved, put on the appropriate respirator or breathing device. REMEMBER, this is an emergency procedure and not intended for prolonged exposure. Since many pesticides can produce toxic fumes or vapors, always ventilate enclosed areas to prevent build-up of toxic fumes.

Remove injured or contaminated personnel from the spill site to a safe area.

If eyes are contaminated with a pesticide, give first priority to washing them out using a portable eyewash bottles, or if these are unavailable, any clean water. Remove contaminated clothing from affected individuals and wash pesticides off skin with detergent and clean water.

If pesticides have been ingested, see Material Safety Data Sheet for specific first aid measures. Immediately seek medical assistance for injured and contaminated personnel. Do not leave contaminated individuals alone unless essential to secure first aid. If necessary, direct a third person to stay with the injured until a physician takes charge and has been advised of the actual or possible pesticide exposure.

Watch for the following symptoms of pesticide poisoning: eye irritation, skin irritation, gastrointestinal discomfort, dizziness, headache, nausea, vomiting, diarrhea, slurred speech, muscle twitching or convulsions, or difficulty in breathing.

2. SPILL IDENTIFICATION

Determine product name for chemical(s) spilled and check Label and Material Safety Data Sheet for immediate hazards. Shut off ignition sources and stop any smoking in case chemicals may be flammable. Isolate contaminated area and keep unnecessary people away.

3. NOTIFY

Apalachicola National Forest HAZMAT coordinator: William (Hugh) Thorn
Office - (850) 643-2282

Apalachicola National Forest Pesticide Coordinator: Gary Hegg
Office – (850) 926-3561

District Safety Officer: William (Hugh) Thorn
Office - (850) 643-2282

Deputy District Ranger : Harold Shenk
Office – (850) 926-3561

Give the following information: Chemical name, location of spill, compartment number and stand number, if known, road number or name, and estimated size of spill in gallons.

The Forest Pesticide Coordinator or HAZMAT Coordinator will notify other key personnel and agencies as required (see attached notification list).

MSDS (Material Safety Data Sheets) are kept at the Apalachicola and Wakulla Ranger District reception desks (850) 643-2282 and (850) 925-3561, respectively and central dispatch (850) 523-8600.

4. CONTAIN SPILL

Spilled pesticides must be contained as much as possible on the site where the spill occurs. Keep spilled pesticides from entering streams, storm drains, wells, ditches, or water systems by following these procedures:

- Wear appropriate protective clothing. At a minimum, this will include suitable clothing for pesticide application, plus rubber or nitrile gloves and safety glasses or goggles. In addition, use coveralls or a rain suit, rubber gloves or overshoes, and/or a respirator if extra protection is needed.
- Prevent further leakage from containers by positioning them so that the damaged part of the container is above the level of the contents or by applying rags, tape, or other materials at hand to temporarily seal the leak
- Separate leaking containers from undamaged containers.
- Rope or flag off the area and post warning signs to keep unprotected personnel from entering.
- Confine the spill to prevent it from spreading. Encircle the spill area with a dike of sand or other absorbent material: rags or similar material may be used if necessary. If spilled material may flow toward sensitive areas, divert it by ditching. If the spill involves a small watercourse, dam it up to confine the spill if possible. If available, activated charcoal may be used to filter contaminated water. For larger waterways, baled straw may be used to contain the spill.
- Dam or divert the flow of clean water around the spill if possible. Muddying the water may inactivate glyphosate. If the pesticide spilled is a liquid, cover it with absorbent material (kitty litter is ideal). If the spilled pesticide is in a dry formulation, cover it with a secured plastic tarpaulin to prevent it from becoming wet or being blown away. (NOTE: Unless this material can be reused in accordance with the pesticide label, it must be disposed of as a hazardous material.)
- DO NOT flush the spill into a ditch, sewer, drain, or off of a road, since this will further spread the chemical.
- Vehicle spill kits contain necessary items for containing small spills (see attached list for items needed in vehicle spill kit). Large spills may require the use of a dozer and/or

additional items from the storage facility spill kit, located at the Wakulla Work Center pesticide storage building.

5. CLEAN-UP

Spill containment is the objective of this emergency spill plan. Clean-up and disposal procedures are covered in FSH 2109.12, Chapter 33, Project Safety Plan, in the 1990 Emergency Response Guidebook (“Orange Book”), and in the Material Safety Data Sheets for each pesticide.

6. DOCUMENTATION

Document spill type, action taken, and any needed follow-up or assistance necessary in a letter to the Forest Supervisor, with cc to Regional Pesticide Specialist.

7. SUMMARY OF CLEAN-UP STEPS

DRY SPILLS

Immediately cover powders or dusts with plastic or tarpaulin to prevent the pesticide from becoming airborne. A fine mist of water may also be used to dampen the dust and reduce spreading. CAUTION: Too much water may dissolve the pesticide and move it into the soil. Sweep the material together, rolling the tarp back slowly as you do.

Shovel the material into plastic bags or drums.

Seal the bags and label them, identifying the pesticide and other contents.

Store the containers of material in the pesticide storage building until the contents can be evaluated for disposal or re-use in a manner consistent with labeling.

LIQUID SPILLS

Pump or bail as much of the spilled liquid as possible into containers, then:

Use absorbent material, such as commercially bagged clay, kitty litter, or sawdust to soak up the spill. Begin spreading the absorbent material around the edge of the spill and work toward the center.

Shovel the absorbent material and pesticide, along with any contaminated soil into leak-proof containers.

Label all containers.

Store the containers in the pesticide storage building until the contents can be evaluated for disposal or re-use in a manner consistent with labeling.

NOTIFICATION LIST OF KEY PERSONNEL AND AGENCIES

District Pesticide Coordinator: Gary Hegg (850) 926-3561

District HAZMAT Coordinator: William (Hugh) Thorn (850) 643-2282

District Safety Officer: William (Hugh) Thorn (850) 643-2282

Deputy District Ranger: Harold Shenk (850) 926-3561

Calhoun Liberty Hospital, (850) 674-5411. Local medical facility to be used in event of an emergency in Liberty or Franklin County.

Tallahassee Memorial Hospital, (850) 431-1155. Local medical facility to be used in event of an emergency in Leon or Wakulla County.

State Oil/Hazardous Substance Spill Hotline. 1-800-424-8802

Forest Hazardous Materials Coordinator: James Bohall
Office – (386) 752-4543

State office of emergency services. 1-800-320-0519
(Notify if assistance is necessary or if required by state law).

USFS Region 8 Spill Coordinator: Walt Sternke
Office – (404) 347-3369

CHEMTREK – EPA number for technical assistance – 1-800-424-9300 (NOTE: Chemicals we normally use are not on EPA's hazardous list: you are not required to contact them.)

EPA National Emergency Response Center – 1-800-424-9346
(Notify only if spilled chemical is on CERCLA Consolidated Chemical List)

Pesticide Safety Team of the National Agricultural Chemicals Association (for technical assistance) (513) 961-4300

RECOMMENDED PESTICIDE SPILL KIT CONTENTS

Storage Facility Kit

4 pairs of nitrile gloves
2 pairs unvented goggles
1 respirator and cartridge (chemical resistant)
2 pairs rubber or neoprene boots or overshoes
2 pairs of overalls or rainsuits
1 roll of flagging or engineers tape
1 dust pan
1 shop brush or whisk broom
1 dozen polyethylene bags with ties
1 quart liquid detergent
1 polyethylene or plastic tarp
10 blank labels
1 ABC type fire extinguisher
80 lbs. absorbent material (kitty litter)
1 square point D handle shovel
1 30-gallon plastic garbage can with
lid (use for cleanup, storage
and transport)
1 roll of duct tape

Vehicle Kit

2 pairs of nitrile gloves
1 pair of unvented goggles
1 pair of rubber or neoprene boots
1 shop brush or whiskbroom
6 polyethylene bags with ties
1 pint liquid detergent
1 polyethylene or plastic tarp
10 blank labels
1 ABC type fire extinguisher
30 lbs. absorbent material
(kitty litter)
2 eyewash bottles (filled)
1 round point shovel
1 30-gallon plastic garbage can with
lid (use for cleanup, storage
and transport)
1 roll of flagging
1 roll of duct tape

APPENDIX B - Biological Evaluation

APPENDIX C - Pesticide Use Proposal Form

US DEPARTMENT OF AGRICULTURE - FOREST SERVICE PESTICIDE - USE PROPOSAL (Reference FSM 2150)		FS-2100-2 (8/79)	
DEPARTMENT / AGENCY		CONTACT / PHONE NO.	
REGION		FOREST	DATE SUBMITTED
Southern (8)		Apalachicola (1)	
1) OBJECTIVE a) Project No. b) Specific Target Pest c) Purpose	A. B. C.		
2) PESTICIDE a) Common Name b) Formulation c) % AI,AE,or lb / Gal. d) Registration No.	A. B. C. D. EPA Reg. No.		
3) FORMULATION a) Form Applied b) Use Strength (%) or Dilution Rate c) Diluent	A. B. C.		
4) lbs. AI Per Acre or Other Rate			
5) APPLICATION a) Method b) Equipment	A. B.		
6) TREATMENT / AREA (attach maps) a) Acres or Other Unit to be Treated b) Number of Applications c) Number of Sites d) Specific Description of Sites	A. B. C. D.		
7) TIMMING a) Month(s) of Year b) States	A. B. Florida		
8) SENSITIVE AREAS a) Areas to be Avoided b) Areas to be Treated with Caution	A. B.		
9) REMARKS a) Precautions to be Taken b) Use of Trained / Certified Personnel c) State and Local Coordination d) Other Pesticides Being Applied to Same Site e) Monitoring f) Other	A. B. C. D. E. F.		
10) Approval (Signatures of Approving Official)			Date

APPENDIX D - Public Involvement and Comments

This document shows the comments we received from the public in response to our scoping efforts and how those comments were addressed in the final decision document.

Public Scoping Announcements and Dates

Scoping Document	Date of Document	End of comment period	Comments Received
Initial Scoping Letter	9/24/09	10/9/09	0
Legal Notice Posted			
Legal Scoping Letter			
Schedule of Proposed Actions	10/09		
Decision Legal Notice Posted			

Listed below are the issues generated from the public scoping requests and how they were addressed in the ea.

Date Rec. Standing?	Who Commented	Issues, Concerns, and Opportunities	How Were the Comments addressed?
		1)	1)
		1)	1)